

REMARKS

Applicant has amended claim 1 to include the subject matter of claims 3 and 7, and cancelled claims 3, 7, 16, 17, and 21, without prejudice or disclaimer of subject matter. New claim 27 has been added. Claims 1, 5, 6, 8, 9, and 12-15, 18-20, and 22-27 are pending.

Claim Rejections – 35 U.S.C. § 112

Claims 19-24 have been rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner asserts that “[i]t is unclear if the steps recited in claim 19 are dependent on claim 1, or if applicant intends for claim 19 to be an independent claim.” The M.P.E.P. states that “[a] claim which makes reference to a preceding claim to define a limitation is an acceptable claim construction.” M.P.E.P. § 2173.05(f). In the examples provided by the M.P.E.P., “claims which read: ‘The product produced by the method of claim 1.’ or ‘A method of producing ethanol comprising contacting amylose with the culture of claim 1 under the following conditions’ are not indefinite under 35 U.S.C. 112, second paragraph, merely because of the reference to another claim.” *Id.* Independent claim 19 makes reference to a preceding claim (i.e., claim 1) in the manner permitted by the M.P.E.P.

Therefore, Applicant asserts that the section 112 rejection of claim 19 is improper and requests that it be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 5-8, 12-24 and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over GB Publication No. 2039950 (“Crook”) in view of U.S. Patent No. 3,862,840 (“Nayar”) and further in view of International Application No. WO 84/04760 (“Dolman”). Claim 3 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Crook, Nayar and Dolman in further view of U.S. Patent No. 5,695,825 (“Scruggs”). Claim 9 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Crook, Nayar and Dolman in further view of U.S. Patent No. 3,663,312 (“Oberly”). Claim 25 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Crook, Nayar and Dolman in further view of U.S. Patent No.

2,515,463 (“McKenna”). Applicants request withdrawal of these rejections for at least the following reasons.

Independent claim 1 recites, in part, “melting the chromium-containing ferroalloy material and the source of free carbon at a melt temperature and holding the melt temperature for a time sufficient to dissolve carbon in the melt.” Crook, Nayar, Dolman, Scruggs, Oberly, and McKenna do not describe or suggest these features.

The Office Action correctly identifies that “Crook fails to teach: . . . holding a melt temperature to dissolve carbon in the melt.” Office Action, p. 4. Instead the Office Action turns to Nayar to describe this feature. Nayar discloses “a process for manufacture of hard and non-deformable alloys with compacting by sintering in the solid-liquid phase” Nayar, title. Specifically, Nayar describes placing a pre-alloyed powder into a mold and pulling the mold through a furnace. *See* Nayar, col. 5, lines 48-63. With regard to a second example, Nayar describes that the pre-alloyed powder includes graphite powder. Nayar, col. 6, lines 25-40. According to this second example, “the sintering temperature utilized in this example was 1,045°C and travel speed [through the furnace] $v=24$ inches/hour.” *Id.*

However, a sintering temperature would not “dissolve carbon in the melt,” as recited in claim 1. In fact, Nayar describes that the mold is a “graphite coated graphite mold” (col. 5, lines 47-48) and that “the only requirements for the mold materials is that the melting point thereof be higher than the desired sintering temperature” (col. 3, lines 5-8). In other words, the sintering temperature is not high enough to melt graphite (i.e., carbon). Moreover, dissolving carbon in a homogenous melt would be contrary to the overall teaching of Nayar. Nayar teaches forming molten material by partly melting particles and using the molten material to facilitate sintering of the remaining particles (which are solid). *See* Nayar, col. 2, line 64 (referring to “liquid phase direct particle sintering”). Nayar teaches partly melting particles so that resultant molten material can fill pores of the particles. *See* Nayar, col. 4, lines 51-53. Specifically, “[a]fter a certain amount of liquid phase is formed, the interconnected porosity becomes essentially zero. Remaining porosity exists as isolated pores”. Completely molten material would not have “isolated pores” – isolated pores only makes sense if there are solid particles. Therefore, Nayar does not describe or suggest “holding the melt temperature for a time sufficient to dissolve carbon in the melt,” as recited in claim 1.

Dolman, Scruggs, Oberly, and McKenna fail to cure the deficiencies of Crook and Nayar. Moreover, none of these cited references describe that the homogenous melt is formed from a chromium-containing ferroalloy material. Though the cited references variously refer to chromium content in a resulting alloy material, none of the cited references describe or suggest that a chromium-containing ferroalloy material is a basis for the homogenous melt.

Additionally, Applicant reasserts that it would not be obvious to combine Crook and Dolman in the manner described by the Examiner. The castings described by Dolman are formed from molten alloy in a foundry. The composition of Dolman and the microstructural requirements of the castings formed from the Dolman composition are the result of overcoming casting and in-service problems. A skilled person looking to produce “a carbide-containing ferroalloy welding consumable material for subsequent use for producing a hardfacing” would not look to the disclosure in Dolman as a source of a potential hardfacing alloy. For at least these reasons, Applicants respectfully request withdrawal the section 103 rejections.

Claim Rejections – 35 U.S.C. § 102/103

Claims 15 and 20 have been rejected under 35 U.S.C. § 102(b) as anticipated by or in the alternative under 35 U.S.C. § 103(a) as obvious over Crook.

As admitted by the Examiner, “Crook fails to teach: . . . chromium/carbon ratio less than 7.0 . . .” Office Action, p. 4. The M.P.E.P. states that “[t]he structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product.” M.P.E.P. § 2113. The process recited in claim 1 forms “a solid carbide-containing ferroalloy welding consumable material having a chromium/carbon ratio less than 7.0.” The structures of independent claims 15 and 20 therefore include “a solid carbide-containing ferroalloy welding consumable material having a chromium/carbon ratio less than 7.0.” As admitted by the Examiner, Crook does not describe or suggest these features. Therefore, Applicant request withdrawal of the section 102/103 rejection.

Claims 15 and 20 have been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative under 35 U.S.C. § 103(a) as obvious over Hulsewig. As described above, the process

recited in claim 1 forms "a solid carbide-containing ferroalloy welding consumable material having a chromium/carbon ratio less than 7.0." The structures of independent claims 15 and 20 therefore include "a solid carbide-containing ferroalloy welding consumable material having a chromium/carbon ratio less than 7.0." Hulsewig does not describe or suggest this feature.

Therefore, Applicant request withdrawal of the section 102/103 rejection.

Conclusion

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this reply should be construed as intent to concede any issue with regard to any claim, except as specifically stated in this reply.

No fees are believed to be due. However, please apply any necessary charges or credits under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

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